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07/27/2001

R. Dennis Nesbitt

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EXAMINER

DUONG, THANH P

THE TOP-FLITE GOLF COMPANY, A WHOLLY OWNED  
SUBSIDIARY OF CALLAWAY GOLF COMPANY  
P.O. BOX 901  
425 MEADOW STREET  
CHICOPEE, MA 01021-0901

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 20

Application Number: 09/917,539  
Filing Date: July 27, 2001  
Appellant(s): NESBITT ET AL.

R. Dennis Nesbitt et al. and the assignee, Callaway Golf Company  
For Appellant



### **EXAMINER'S ANSWER**

This is in response to the appeal brief filed November 7, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct. It is submitted that essentially the only real issue present is whether the references can be combined because the facts are that the claims features themselves are individually taught by the prior art.



**(7) Grouping of Claims**

Appellant's brief includes a statement that claims 1-18 stand or fall together, claims 19-27 stand or fall together, and claims 28-30 stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

5,820,489	Sullivan et al.	10-1998
5,688,191	Cavallaro et al.	11-1997
5,810,678	Cavallaro et al.	09-1998
5,856,388	Harris et al.	01-1999
4,848,770	Shama	07-1989
4,85,937	Schenk	04-1978
5,683,312	Boehm et al.	11-1997

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:



**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6, 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. (5,820,489) in view of Cavallaro (5,688,191) and Cavallaro (5,810,678) and Harris et al. (5,856,388). Sullivan discloses a golf ball having a core with PGA compression 45-85 or its Riehle compression 115-75 (Col. 5, lines 14-20) and a core diameter of 1.54-1.545 inch (Col. 4, lines 54-55), a cover layer containing a high acid ionomer with Shore D hardness about 65 or greater and cover thickness of 0.08-0.13 inch (Col. 5, lines 22-26 and Abstract and Col. 23, lines 21-22). Sullivan does not disclose a mantle layer with reinforcing material but one of ordinary skill in the art recognizes that a golf ball can be fabricated with plurality of layers including a mantle layer which impact playing characteristics. Cavallaro '191 teaches that it is desirable to include a mantle layer, which is believed to have a softer "feel" upon ball impacting against a club face. (Col. 8, lines 6-24). Cavallaro '678 also makes it clear that conventional two-piece balls provide maximum distance but the two-piece balls have a hard "feel" when struck by a club (Col. 1, lines 23-45). Cavallaro '678 further teaches that it is desirable to fabricate a multiplayer golf ball having a soft mantle layer to overcome the conventional two-piece hard "feel" (Col. 4, lines 28-60). Cavallaro '678



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specifically teaches “a golf ball that has durability, a low spin rate and substantial distance more like a conventional two piece ball, but has a soft feel by using a soft, high specific gravity mantle layer and a soft core.” (Col. 4, lines 33-38 and Col. 14 lines 31-43). Cavallaro ‘678 teaches explicitly that the addition of fillers or reinforcing materials to the mantle and cover layers of a golf ball will improve the moment of inertia and lower the spin rate (Col. 14, lines 31-44). Likewise, Harris et al. ‘388 also makes it clear that golf ball manufacturers introduced a multiplayer golf balls with multiple intermediate layers or mantle layers in an effort to overcome the undesirable hard “feel” aspect of a conventional two-piece balls (Col. 3, lines 34-50). Thus, it would have been obvious and desirable in view of Cavallaro ‘191 and/or Cavallaro ‘678 and/or Harris ‘388 to one having ordinary skill in the art at the time of the invention was made to incorporate a mantle layer as taught by Cavallaro ‘191 or Cavallaro ‘678 or Harris ‘388 into Sullivan’s golf ball in order to provide a low spin rate golf ball with soft “feel” upon ball impacting against a club face. Regarding claims 2-6, Cavallaro ‘191 discloses a mantle layer of thermoset materials (Abstract) with a mantle layer thickness of 0.025 to 0.125 inch (Col. 7, lines 34-36) and a styrene-butadiene material (Col. 4, lines 27-30), thermoplastic material of polybutylene terephthalate (Col. 4, lines 56-67).

2. Claims 7 and 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art as applied in claim 1, above and further in view of Shama (4,848,770) and Schenk (4,085,937) and Boehm et al. (5,683,312). With respect to claims 7, 19-22, and 28-29, Sullivan ‘489 discloses the use of fillers such as limestone and silica in the core (Col. 9, lines 19-22). However, Sullivan ‘489 does not disclose a vitreous (glassy)



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mantle layer comprising of ceramic. Cavallaro '678 discloses the use of fillers in core, mantle, and cover layer particularly increasing the filler amount in the mantle and cover layers to improve moment of inertia and lower spin rate (Col. 14, lines 31-44).

Sharma 770' teaches that a mantle layer contains a filler (Col. 3, lines 1-6 and Col. 3, lines 25-26) to control the weight of the finished golf ball, provide the compression, and cut resistance of the golf ball. Schenk 937' also teaches the use of filler such as precipitated silica in the formulation to reinforce the structure of the golf ball (Col. 6, lines 6-10). Schenk teaches use of glass microspheres in the golf ball formulation to provide cut resistance and control the weight of the golf ball (Col. 4, lines 35-40 and Col. 5, lines 57-67). Thus, it would have been obvious in view of Sharma and Schenk to one having ordinary skill in the art to incorporate the filler of Sharma and/or with specific filler types of silica and glass microspheres of Schenk in prior art in order to control the weight, improve compression, and cut resistance. Claims 23, 24 and 25-27 recite limitations similar to claims 10, 1, and 16-18. Thus, claims 23, 24, and 25-27 are rejected for the same reasons as applied in claims 10, 1, and 16-18, above. With respect to claim 28, the prior art discloses the claimed invention except the use of metal filler in the mantle layer; however, Boehm teaches the use of metallic metal such as aluminum (Col. 4, lines 27-30) in the mantle layer to control the spin rate (Col. 5, lines 15-20). Thus, it would have been obvious in view of Sharma, Schenk, and Boehm to incorporate a metal filler as taught by Boehm in prior art golf ball in order to control the spin rate. Applicant should note that the type of fillers in the mantle layer is a design choice since the selection of fillers is determined by filler cost, specific gravity, and



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polymer dispersity. With respect claim 29, each metal has its own specific gravity, and the selection of metal and/or alloy and its amount in the formulation must result a finished golf ball that complies with USGA weight limits of 45.93 grams (Max). Claim 30 recites limitations similar to claim 14; thus, claim 30 is rejected for the same reasons as applied in claim 14, above.

**(11) Response to Argument**

(1) Appellant argues that there is no teaching or suggestion in Cavallaro '191 or Sullivan to motivate one skilled in the art to add a mantle layer to the golf ball because Sullivan specifically teaches a two-piece golf ball having a core and a cover.

Examiner respectfully submits that Cavallaro '191 teaches that it is desirable to include a mantle layer, which is believed to have a softer "feel" upon ball impacting against a club face (Col. 8, lines 6-24). Cavallaro '678 also makes it clear that conventional two-piece balls provide maximum distance but the two-piece balls have a hard "feel" when struck by a club (Col. 1, lines 23-45). Cavallaro '678 further teaches that it is desirable to fabricate a multiplayer golf ball having a soft mantle layer to overcome the conventional two-piece hard "feel" (Col. 4, lines 28-60). Cavallaro '678 specifically teaches "*a golf ball that has durability, a low spin rate and substantial distance more like a conventional two piece ball, but has a soft feel by using a soft, high specific gravity mantle layer and a soft core.*" (Col. 4, lines 33-38 and Col. 14 lines 31-43). Cavallaro '678 explicitly teaches that the addition of fillers or reinforcing materials to the mantle and cover layers of a golf ball will improve the moment of inertia and lower



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the spin rate (Col. 14, lines 31-44). Likewise, Harris et al. '388 also makes it clear that golf ball manufacturers introduced a multiplayer golf balls with multiple intermediate layers or mantle layers in an effort to overcome the undesirable hard "feel" aspect of a conventional two-piece balls (Col. 3, lines 34-50). Thus, it would have been obvious and desirable in view of Cavallaro '191 and/or Cavallaro '678 and/or Harris '388 to one having ordinary skill in the art at the time of the invention was made to incorporate a mantle layer as taught by Cavallaro '191 or Cavallaro '678 or Harris '388 into Sullivan's golf ball in order to provide a low spin rate golf ball with soft "feel" upon ball impacting against a club face.

(2) Appellant argues that one skilled in the art would not be motivated by Cavallaro '191 to add a mantle, specifically the mantle of Cavallaro '191, to Sullivan because the addition of the mantle of Cavallaro '191 (See Table II and III) increases the spin rate where the spin rate of the golf balls of the invention is higher than of the commercial balls. Examiner respectfully disagrees with the Appellant. Sullivan shows the spin rates on Table 3, which are measured by a 9-iron. Cavallaro '191 shows the spin rates on Table II and III, which are measured by a Driver and an 8-iron, respectively. Being the fact that the golf balls of Cavallaro '191 are not tested with the same club head # as the Sullivan's club head. Thus, it would be inaccurate to assume the golf balls of Cavallaro generate higher spin rates than the golf balls of Sullivan. Note, in order to accurately compare the spin rates for the golf balls, the spin rate test must be conducted with the same iron # or wood #, speed of the club head, and launched angle of the ball (Sullivan, Col. 21, lines 22-27). In addition, Cavallaro '678 specifically teaches "*a golf ball that*



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*has durability, a low spin rate and substantial distance more like a conventional two piece ball, but has a soft feel by using a soft, high specific gravity mantle layer and a soft core."* (Col. 4, lines 33-38 and Col. 14 lines 31-43). Furthermore, Appellant has not disclosed and/or discussed in the original specification what spin rate values are considered to be "low spin rates" as claimed and what spin rate values are considered to be "high spin rates" for commercial balls.

(3) Appellant also argues that Cavallaro '191 does not disclose a mantle comprising a polymeric material having a reinforcing material dispersed throughout the polymeric material. Examiner agrees that Cavallaro '191 is silent with respect to adding a reinforcing material (fillers) in the polymeric material (mantle layer). However, Cavallaro '678 explicitly teaches that the addition of fillers or reinforcing materials to the mantle and cover layers of a golf ball will improve the moment of inertia and lower the spin rate (Col. 14, lines 31-44). Thus, it would have been obvious in view of Cavallaro '678 to one having ordinary skill in the art to provide a mantle layer with reinforcing material (fillers) as taught by Cavallaro '678 in prior art's golf ball in order to improve the moment of inertia and lower spin rate.

For the above reasons, it is believed that the rejections should be sustained.



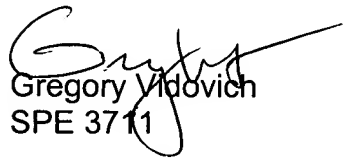
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Respectfully submitted,



Tom Duong  
January 23, 2004

Conferees



Gregory Vidovich  
SPE 3711



Allan Shoap  
SPE 3724

MICHELLE BUGBEE, ASSOCIATE PATENT COUNSEL  
SPALDING SPORTS WORLDWIDE INC  
425 MEADOW STREET  
PO BOX 901  
CHICOPEE, MA 01021-0901